Lessons Learned From The Business Community . . .

HOW THE SHORT RANGE AIR DEFENSE ARTILLERY IS EXPLOITING A STRATEGIC CRISIS POINT

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Introduction

Under Andrew Grove's leadership as President and CEO, Intel Corp. became the world's largest computer chip producer, the fifth most admired company in America, and the seventh most profitable of the Fortune 500 companies. Grove's insights and experiences offer a creative new way of dealing with the "nightmare moment" every leader dreads—the moment when massive change occurs and all bets are off.

The U.S. Army is in the midst of massive change as it redefines its roles and missions and determines how to implement a strategy to achieve the Objective Force. The Army can draw lessons learned from common business practices, thereby assisting military leaders in the transformation to an Objective Force Army. This article examines strategic crisis points from business that directly parallel the Army's transformation of the roles and missions of the Short Range Air Defense (SHORAD) weapon system.

The current SHORAD weapon systems consist of the line-of-sight Stinger missile mounted on a High Mobility Multipurpose Wheeled Vehicle (collectively called the Avenger), the Bradley Fighting Vehicle (collectively called Linebacker), and the Man-Portable Air Defense System. The mission is to protect maneuver forces and critical assets from air and missile attack.

Strategic Inflection Point

In his book *Only the Paranoid Survive: How to Exploit the Crisis Points That Challenge Every Company and Career*, Grove defines the strategic inflection point as the critical point where transformation must occur. This happens when the balance of forces shifts from the old ways of operating and doing business and is transformed into the new process.

Before the strategic inflection point, the organization is simply doing business as usual. But something changes, and a new approach, a new thought process, a new strategy, or a new mode of operation is required or failure will be imminent. What worked in the past doesn't work anymore. The strategic inflection point is the catalyst for change and is the *single factor* that causes action. When a strategic inflection point occurs, all past rules shift fast, furiously, and forever. In business, strategic inflection points can be set off by almost anything: intense competition or changes in regulations, technology, leadership, or funding.

A prime example of a strategic inflection point can be seen when Wal-Mart builds in a small town—everything changes. The hometown store can't match Wal-Mart's logistics, computerized inventory management, large volume-based purchases, and companywide training programs. Wal-Mart's customer service, can-do attitude, and capability to lower prices corner the market. The hometown store's failure to either recognize or adapt to the change allows for a quick transformation shift.

Intel's Inflection Point

The computer industry has changed significantly throughout the last 20 years. During the 1980s, high-profile computer companies (IBM, DEC, Sperry Univac, and Wang) sold computers as a "company package" that involved proprietary design, chips, computers, operating systems, and application software that was marketed and sold by company salespeople. This was an expensive "vertical" purchase where the customer got only what a particular company offered by purchasing their proprietary computer package. In the mid-1990s, a crisis point in the industry occurred with the explosive rise in microprocessing power, the popularity of personal computers, and a dramatic drop in price. This changed the entire structure of the computer industry and a new "horizontal" industry emerged to such an extent that no one company had the total edge on the market. A consumer could "mix and match" microprocessors, computer manufacturers, operating systems, and any one of many

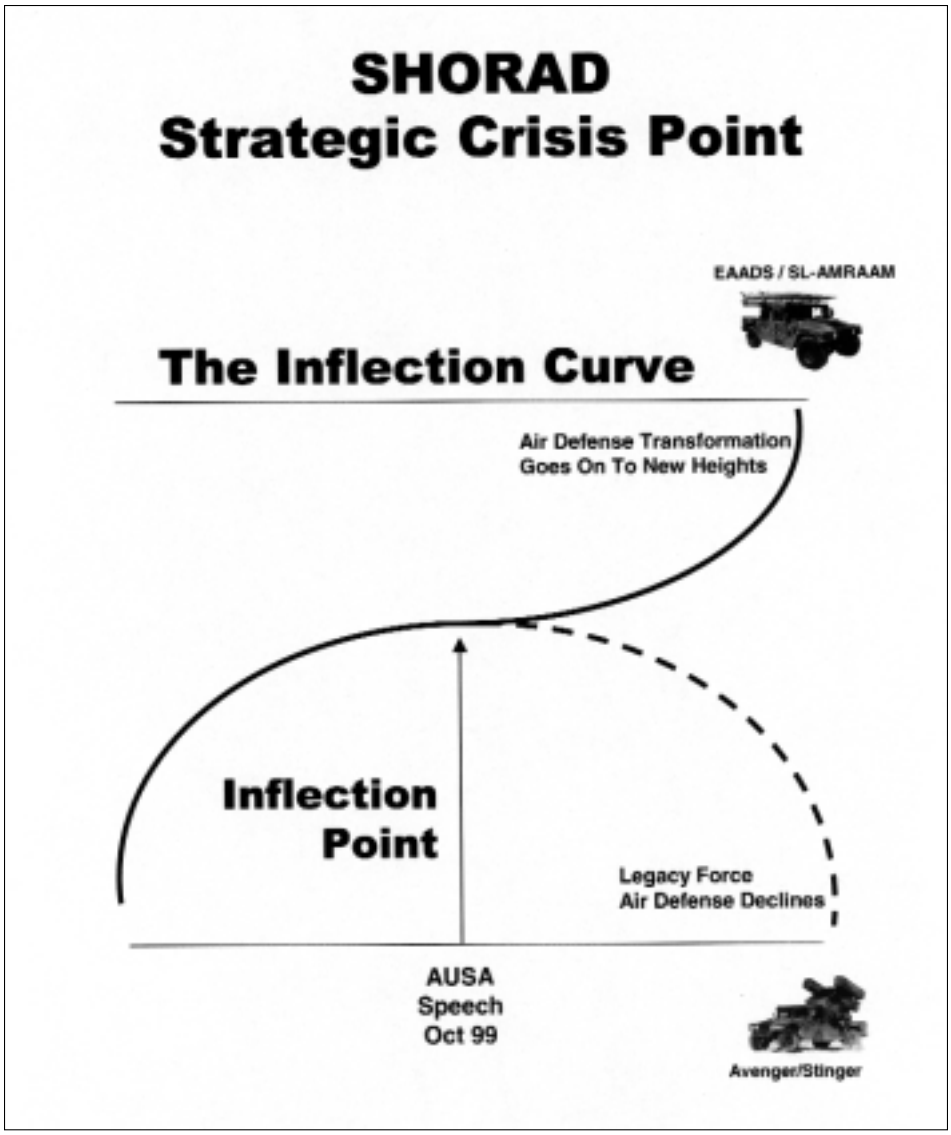

Figure 1.

off-the-shelf software applications at retail or computer stores. The computer industry's transformation from the vertical "cradle-to-grave" model to the new horizontal model took place over many years in small incremental steps. Intel had to adjust to the new market paradigm or face extinction.

What happened to cause this change? In retrospect, Grove identifies the strategic inflection point as when the Japanese entered the memory production market and began research and development of new chips to lead the world market. In one Japanese company, it was reported that the memory development activities alone were conducted in a large, high-rise production building where, on separate floors, designers researched and developed several new generations of memory. Compare this to the relatively small amount of memory chip development in the United States, with little to no investment in research and development, and it is easy to see why the United States was looking over its shoulder.

U.S. companies could not compete against Japanese low-cost, high-quality products. The computer industry was reliving the tribulations of other U.S. industries (television, automobile, steel manufacturing, and machinery) that had felt the impact of a strategic inflection point from aggressive Japanese competition. Understandably, management's first reaction to a strategic inflection point is denial. Some U.S. industries were losing the fight and losing money because they failed to recognize the Japanese business threat.

This transformation shift in the computer industry caused a nightmare moment for Grove and threatened Intel's continued success. Fortunately, Intel's management recognized the shift before it was too late. They changed their legacy production and were able to adapt. Grove took charge and hoped the others would follow his lead. He recognized the need to expand his knowledge base, sponsored several grueling management-level debates, and spent hours questioning and listening to employee concerns.

In the end, Grove succeeded and was in the forefront of the computer industry by transforming and adapting Intel's business from memory chips to microprocessors. Intel increased production and marketed its microprocessor as the "brain" for any IBM-compatible computer while concurrently phasing out its legacy memory production line. Intel's lessons learned from the strategic inflection point were as follows: notice the shift, get smart on the cause of the new shift, strategically adapt to the shift, prepare the business to transform, and provide the resources necessary to make the transformation happen.

Army's Inflection Point

In the hands of good leaders, a strategic inflection point can be an ace. The Army leadership has committed itself to turning this strategic inflection point into a positive force, to win both in business through the acquisition community and on the battlefield through the acts of soldiers.

The 1990s were marked by the superior strength of the U.S. Army as it crushed Iraq in the Gulf War. After the war, reviews were conducted to determine the strengths and weaknesses of the operational and technical capabilities of the Army and how they might be improved. It is not likely that an adversary will allow months of buildup and preparation, access to naval ports, and an opportunity to infuse the latest weapons and technology into maneuver units prior to conflict.

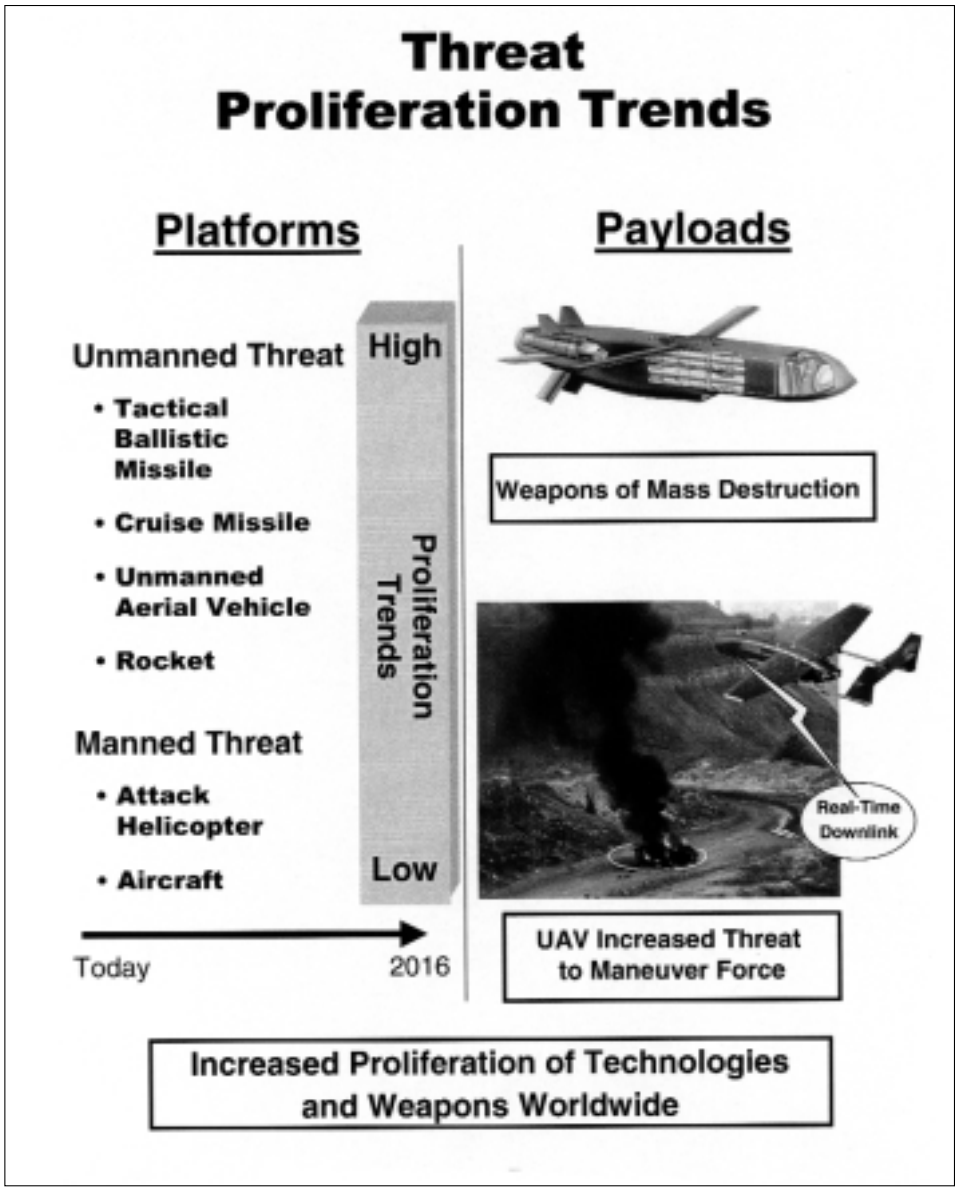

Figure 2.

The Army was too heavy, had too long of a logistics tail, and was not agile and mobile enough to react to an unforeseen crisis around the world in a timely manner. Identification of these deficiencies was the beginning of the U.S. Army's strategic inflection point. It also marked the beginning of a new era—the Army began infusing advanced technologies into the maneuver forces by developing the digitized division and began transforming the Army to the Objective Force. This change for the Army is a crossroads that can mean either an opportunity to rise to new heights or signal the beginning of the end as weapon system developers adjust to transformation.

SHORAD Inflection Point

In October 1999, Army Chief of Staff GEN Eric K. Shinseki delivered the now-famous speech to the Association of the United States Army (AUSA), unveiling the Army vision for meeting the Nation's requirements today and in the future. The Army is transforming into a force that is strategically responsive and dominant at every point on the spectrum of conflict. This AUSA speech was a realization to the SHORAD community that it had to transform and better define its role on the future battlefield or be left behind. This was the critical and defining moment for SHORAD (Figure 1). For SHORAD, it means a strategic inflection point of huge proportions. SHORAD is in the midst of a major transformation, attempting to realign, adapt to the new goals and direction of the Army, redefine roles and missions, and develop a new and more lethal path ahead for the Objective Force.

To understand why the strategic inflection point occurred, we must begin by looking at the SHORAD Legacy Force. The Stinger missile has performed admirably during the last 20 years—first, with the Afghanis when the Soviets invaded Afghanistan, then during the Gulf War, and today in the struggle against terrorism. SHORAD must take action to position itself against an evolving threat with increased standoff capability, develop new and proactive methods for attacking the threat, and be able to quickly integrate new technologies when they become available.

With competition for fewer resources, funding for the Stinger-based platforms (Avenger and Linebacker) has been rescinded. As a result of the lack of funding, both the combat developer and the materiel developer recognized the need to transform the maneuver air defense force. New ways of doing business had to be developed because SHORAD had no clear path ahead to protect the Army's maneuver forces from air and missile attack as they transform to the Objective Force.

SHORAD Path Ahead

The SHORAD transformation began by re-evaluating the threat to the maneuver force at the unit-of-action and unit-of-employment levels for the Objective Force timeframe. The SHORAD force now must concern itself with a new and growing threat, including beyond-line-of-sight targets—unmanned aerial vehicles (UAVs) (both reconnaissance and combat), cruise missiles, and the traditional rotary- and fixed-wing aircraft.

In the far term, SHORAD must evolve to defeat rockets, artillery, and mortars (Figure 2). The air defense materiel and combat developer communities looked hard at future technologies, developing a leap-ahead or evolutionary acquisition approach that would provide for drastically improved capabilities in the near term, while

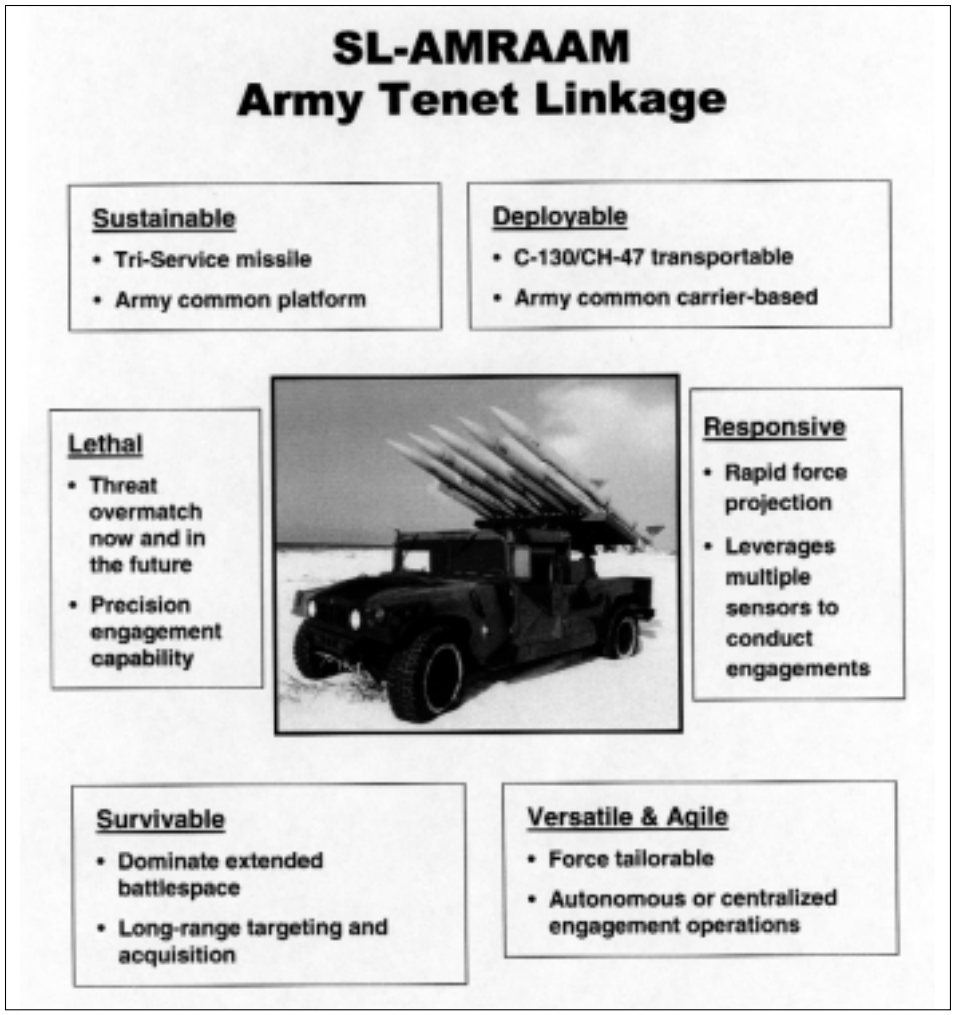

Figure 3.

evolving the weapon system as the Army transforms to defeat threats in the far term.

Although still evolving as a result of the crisis point, the Enhanced Area Air Defense System (EAADS) appears to be able to provide that opportunity and eventually replace most of the Stinger-based force. Consistent with the development of the Future Combat Systems, the initial capability of EAADS is the Surface Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM). This initial system-of-systems capability includes the launcher; missile; external sensor; and battle management/command, control, communications, computers, and intelligence. This capability will enhance air defense by providing a netted and distributed architecture that is compatible with the current SHORAD force and has a missile that is interoperable with the other Services. The EAADS concept fits well with the Army Chief of Staff's Objective Force tenets—highly deployable, threat overmatch across the entire spectrum of conflict, and force-tailorable based on mission requirements (Figure 3).

SHORAD Lessons Learned

EAADS will be developed to evolve in lock step with technology and warfighter tactics, techniques, and procedures. Although the initial capability of EAADS (SL-AMRAAM) is a kinetic energy solution, it will have the ability to evolve to other more advanced kinetic energy and directed energy solutions as they mature. EAADS is an open architecture designed to avoid any dead-end solutions. Fighting through the strategic inflection point is not a fast or easily achievable process. It must be taken in small incremental steps over several years (much like Intel). It also requires the support of senior leaders as they articulate the future vision while listening to the community.

Conclusion

The Army's vision of transformation is a proactive step. Army leadership saw the strategic inflection point early enough and took the appropriate action to counter the expected future threat. The SHORAD development community is diligently working toward the Objective Force goal and is applying the lessons learned from the business community. Other Army development programs could very well benefit from the lessons learned from the SHORAD effort. Countless hours of discussions, budget drills, requirements analyses, doctrine definition, planning, team building, and other exercises are paving the road to the new way of doing business. We are operating under new guidelines with a new objective. As technology evolves, EAADS is the future for SHORAD. SHORAD has the competitive edge and path forward as the air defense Objective Force rises to new heights after positively responding to the strategic crisis point.

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